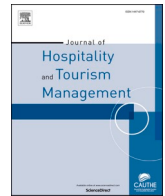




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Effects of COVID-19 on customer service experience: Can employees wearing facemasks enhance customer-perceived service quality?

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ARTICLE INFO

Keywords:

COVID-19

Facemasks

Customer-perceived service quality

Signaling theory

Mediation effects

ABSTRACT

Wearing a facemask is an effective part of personal hygiene management (WHO, 2020). Not only can it offer healthy people some protection against coronavirus disease 2019 (COVID-19) infection, but it can also reduce the spread of the virus. Wearing facemasks, as a part of the various regulations and guidelines encouraged by the Chinese government and hospitality firms, has been widely accepted by the public in the post-COVID-19 era in China. But few studies have considered the effects of employees wearing facemasks on the customer service experience. Based on signaling theory, this experimental study explores the effects of hotel employees wearing facemasks on customer perceptions of service quality. The results indicate three main effects. (a) Having employees wear facemasks can improve perceptions of customer service quality. (b) Customers commonly feel that female employees wearing facemasks could provide higher service quality than male mask-wearing employees, but the improvement in customer perception with male employees wearing facemasks is greater than the situation between facemask-less and facemask-wearing females. (c) Customer perceptions of employee expertise, employee trustworthiness, and hotel trustworthiness play serial mediating roles. Recommendations to help hotel managers improve customers' service evaluations during the COVID-19 pandemic are provided.

1. Introduction

The coronavirus disease 2019 (COVID-19) pandemic has imposed significant detrimental short- and long-term effects on the economy and society, especially in terms of the hospitality and tourism industry (Altuntas & Gok, 2021; Gursoy & Chi, 2020). In response to the health and safety challenges posed by COVID-19, many countries and regions have promulgated various preventative measures and guidelines to slow the spread of the virus and support economic recovery, such as social distancing, wearing facemasks, reducing occupancy to 50%, providing hand sanitizer containing at least 60% alcohol in public places, and cleaning and disinfecting frequently touched objects and surfaces (Breier et al., 2021; Gray, 2020; Mehta, Kumar, & Ramkumar, 2021; Schumaker, 2020; Spitzer, 2020; WHO, 2020; Yu, Seo, & Hyun, 2021). It has brought an opportunity for hotel businesses to adjust their traditional business models (Gössling, Scott, & Hall, 2021) to adapt to the post-COVID-19 era. High-quality customer service is crucial to long-term corporate success in the service and hospitality sector (Loveland, Thompson, Lounsbury, & Gibson, 2016). For its long-term development, the hospitality industry needs to adjust and innovate

service processes to meet the new situation's requirements, such as social distancing rules and higher standards of health and hygiene (Dube, Nhamo, & Chikodzi, 2020; Gössling et al., 2021). Among the preventative measures, wearing facemasks is an effective way to slow the spread of the virus (Donthu & Gustafsson, 2020). It is also an important way to maintain personal hygiene (Yu et al., 2021). However, facemask requirements in public remain controversial (Greenhalgh, Schmid, Czypionka, Bassler, & Gruer, 2020; Sargent, 2020). Facemask wearing, partly as a protection against polluted air, viruses and bacteria, has become normalized in some Asian countries (e.g. China, Japan, South Korea) (Trisha Greenhalgh et al., 2020). While facemask wearing was rarely seen in Western cultures before the COVID-19 pandemic (Kirk & Rifkin, 2020). Thus then individuals' perceptions of the importance of wearing facemasks may vary (Haischer et al., 2020) based on the cultural values in different countries and regions (Cheng, Lam, & Leung, 2020). For example, some individuals in Western countries believe that upholding preventative measures (e.g., wearing facemasks) negatively affects their lifestyles (Godycki-Cwirko, Panasiuk, Brotons, Bulc, & Zakowska, 2017). Some individuals are concerned that face coverings could make them stand out negatively because of racial or political

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<https://doi.org/10.1016/j.jhtm.2021.12.004>

Received 6 April 2021; Received in revised form 12 October 2021; Accepted 16 December 2021

Available online 23 December 2021

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biases (Kirk & Rifkin, 2020). Furthermore, some employees and consumers have chosen not to wear facemasks in crowded public spaces, such as festivals (Knowles & Lati, 2020). Others do not wear facemasks properly in service interaction (Lin, Lee, & Green, 2020; NYdatabase, 2020). Several organizations and individuals considered that the efficacy of the different types of facemasks in preventing respiratory infections during epidemics is sparse and contested (Feng et al., 2020). On contrary, some hospitality companies have strictly followed the guidelines and have implemented additional rules for employees and customers (Lucas, 2020).

In China, facemask requirements in public have generally been accepted and have become a part of individuals' conscious effort to protect others based on the higher-level, collective values (e.g., altruism and solidarity) (Cheng et al., 2020). There is a long history and tradition of wearing facemasks during public health emergencies. During the spread of SARS in 2003, Chinese people also adopted the protective measure of wearing facemasks, in turn affecting the perception of wearing facemasks in East Asia (ChinaDaily, 2020). Given that the COVID-19 pandemic continues to unfold, The COVID-19 Comprehensive Prevention and Control Team of the State Council of China encourages the public to adhere to good hygiene habits and keep a healthy lifestyle, which includes washing hands frequently, wearing facemasks, using public chopsticks, keeping a social distance (e.g.1-m) and so on. In addition, the "Basic Code of Citizenship towards COVID-19 (2021) in China" emphasizes that individuals should wear a facemask in public places, especially when they are crowded.

To deal with the perceived risk from human contact and reduce concerns over hotel service interactions, wearing facemasks has become a common practice for workers engaged in customer–employee interaction in China, while few studies have been examined the impact of employees wearing facemasks on customer service experience. One preliminary finding is that hearing-impaired customers have increased difficulty understanding employees with facemasks, as the facemasks limit their ability to read facial expressions and lip movements (Betteley, 2020). Wu, Liang, and Gursay (2021) found that employees wearing facemasks can enhance their physical attractiveness and further enhance customer satisfaction evaluation. Previous studies have shown that frontline employees' dress styles, hairstyles, headwear, facial hair, uniforms, tattoos, and other features can affect customer satisfaction (Choi & Mattila, 2015; Foster & Resnick, 2013; Ozanne, Tews, & Mattila, 2019). According to signaling theory, an employee's appearance is an important indicator of his or her expertise (Spragley & Francis, 2006), and researchers have acknowledged that employee expertise is a critical element of service quality (Sürücü, Öztürk, Okumus, & Bilgihan, 2019). However, the tourism and hospitality literature has not yet investigated the question of whether or not frontline employees wearing facemasks can improve customers' perceptions of employee expertise and enhance their customer service experience.

Customer trust is also a strong determinant of perceived quality in the customer–employee interaction (Hikkerova & Sahut, 2014). A high level of trust typically results in positive emotions and behaviors on the part of customers (La & Choi, 2012). Customer trust happens in a process that is influenced by various signs (such as employee traits or body language) during in-service interpersonal interactions and communications (Ponnapureddy, Priskin, Ohnmacht, Vinzenz, & Wirth, 2017). Thus, enabling customer trust may be a breakthrough path enabling hotels to recover and improve their business. However, to date, no research has investigated the effect that having employees wear facemasks has on customer trust, and no research has examined the role of customer trust in the relationship between employees wearing facemasks and the perceived quality of customer service.

This study, therefore, applies to signal theory to examine the critical role that wearing facemasks plays in the interpersonal interactions between hotel service employees and customers. The study's specific objectives are (a) to examine the effects of having hotel employees wear facemasks on customer-perceived service quality, (b) to investigate the

relationship between employees wearing facemasks and consumer trust towards both employees and hotels, and (c) to assess the serial mediating effects that customer-perceived employee expertise and consumer trust have on the relationship between frontline employees wearing facemasks and consumer perceptions of service quality.

2. Research background and hypothesis development

2.1. Signaling theory

In market transactions, buyers often have less information about products and services than sellers, which results in information asymmetry. The signaling theory was proposed by Spence (1973) as a means to explain the problems of information asymmetry, information feedback, and information balance. According to Spence (1973), signals are observable and variable attributes that companies can use to convey the previously unobservable aspects of the products they provide. When customers are faced with incomplete information about a product (i.e., a lack of intrinsic cues), they use whatever extrinsic cues are readily available to make more accurate assessments of quality (Biswas, Dutta, & Biswas, 2009; Zeithaml, Varadarajan, & Zeithaml, 1988). Signaling is particularly important in situations where a product's quality is unobservable (Kirmani & Rao, 2000). In the service context, such signaling is especially relevant because the intangibility, variability, perishability, inseparability, and non-standardized nature of most services make them difficult for customers to evaluate before making their purchasing decisions (Bansal & Voyer, 2000). Naturally, people's appearance, clothing, or accessories can convey information as a form of non-verbal communication (Rabolt & Solomon, 2004).

Due to the COVID-19 pandemic, wearing facemasks has become a salient feature in the appearance of frontline employees in China. Based on signaling theory, we argue that when employees wear facemasks, it serves as a form of nonverbal communication that conveys important information on the quality of service products.

2.2. Perceived employee expertise

The term "customer-perceived employee expertise" refers to a customer's beliefs about whether an employee has the knowledge and skills needed to meet customer needs (Hennig-Thurau, 2004). The employee's expertise may be demonstrated by explanations (Barnes, Collier, Howe, & Hoffman, 2016) or by observing how the employee completes tasks (Jaseem Bu-Rahmah & Jacobs, 2012). In this signaling process, the employee seeks to influence the customer's perceptions of his or her expertise. Such signaling may involve social and analytical skills, the application of knowledge and resources, flexibility, out-of-the-box thinking, or demonstrations of the ability to deliver on a promise or to perform a specific task. These signals may be the key means to create a perception of expertise in the minds of customers (Wirtz et al., 2018). However, previous studies have also demonstrated that perceived expertise may be affected by non-task-related cues such as personal attractiveness (DeBono & Harnish, 1988) or style of dress (Spragley & Francis, 2006).

Apparel cues, in particular, are strongly associated with perceptions of expertise in consumers' minds, and these cues influence perceptions regardless of the employee's actual expertise (Darley & Fazio, 1980). Previous studies have shown that the formal apparel of an employee is very commonly associated with the perceived level of expertise (Barney, Jones, & Farmer, 2020). The more professional an employee's apparel appears to be, the higher the perceived expertise in consumers' minds. For example, a white coat has been shown to enhance perceptions of authority (Brase & Richmond, 2004), competence (Gledhill, Warner, & King, 1997), and expertise (Hochberg, 2007).

In this study, we tested whether the apparel cue of employees wearing facemasks works like a white coat to instill in customers' perception of employee expertise during hospitality service interactions.

2.3. Customer trust

Trust refers to the degree of confidence that individuals have in other people's abilities (e.g., trust in "the exchange partners' reliability and integrity") (Morgan & Hunt, 1994). In general, people seek signals of trustworthiness to help them avoid, reduce, or minimize their risks and vulnerabilities as much as possible (Hassan, Toylan, Semerciöz, & Aksel, 2012). In the field of hospitality and tourism, Ponnepureddy et al. (2017) defined consumer trust as "a concept that demonstrates the degree to which tourists believe a hotel's marketing and management actions, which can also be interpreted as guest belief in honesty, fairness or benevolence of the services provided (p 972)." Creating consumer trust is a dynamic process that occurs at different stages and concerns different objects in service interactional relationships (Ponnepureddy et al., 2017). Several studies have shown that customers can distinguish between employees and their firms as two separate entities (Touzani & Moussa, 2013). For example, Touzani and Moussa (2013) observed two paths of trust-building, one toward firms in general and the other toward personnel in particular. Based on past studies, we suggest that consumer trust in hotels can be divided into two types of interactional relationships: trust in frontline employees and trust in hotels.

2.4. Customer-perceived service quality

Service quality refers to customers' general judgments or evaluations of the services they receive (Parasuraman, Zeithaml, & Berry, 1988). Therefore, "service quality" is an overall measure of the service provider's market positioning and value to customers (Wong & Wu, 2013). Perceptions of service quality have a hierarchical factor structure that is influenced by the quality of the customer–employee interaction, the environment, and the outcome (Brady & Cronin, 2001). The most effective approach to assessing service quality is to consider three dimensions, namely, performance quality, delivery quality, and physical environment quality (Dagger, Sweeney, & Johnson, 2007). Among these dimensions, delivery quality has the most direct and critical effect on perceived service quality (Joon Choi & Sik Kim, 2013), or a customer's perceptions of the employee–customer interaction process (Han, Lee, Chua, Lee, & Kim, 2019). Customer perceptions of service delivery quality involve two main aspects: (a) the perceived service quality of the organization, as assessed by the firm's organizational features, and (b) the perceived service quality of the employees, as assessed by the customers' direct interactions with workers (Nam, Ekinci, & Whyatt, 2011). Numerous studies have shown that employee attitudes, behaviors, and expertise can affect customer-perceived service quality either positively or negatively (Bitner, Booms, & Tetreault, 1990; Redda & Van Deventer, 2017).

2.5. Hypotheses

2.5.1. Effects of employees wearing facemasks on customer-perceived service quality

In the hotel industry, frontline employees have a great deal of personal interaction with customers, and such interaction is an important area of concern for hotel managers seeking to promote their quality of service (Grobela, 2019). According to signaling theory, employee apparel is among the most noticeable cues that affect consumers' evaluations of employees and influence their approach intentions (Barney et al., 2020). Employee apparel can be used to signal specific traits about an employee, especially for customers who have no prior experience of a hotel product or service (Dodds, 2002).

Previous research on apparel has shown that the appropriateness of dress affects perceptions of service quality (Yan, Watchravesringkan, & Yurchisin, 2011). Employee apparel may signal information about professional roles and communicate desirable (or undesirable) service attributes to the customer (Hoffman & Turley, 2002). Once a perception of service quality is instilled in the customer's mind, it may be difficult to

alter that perception (Darley & Fazio, 1980). Moreover, a construct to measure service quality (SERVQUAL) (Parasuraman et al., 1988) has shown that reliability and assurance are two of the most important factors that influence customers' evaluations of service quality (Ekinci & Dawes, 2009; Redda & Van Deventer, 2017). As we know, wearing a facemask reduces the spread of respiratory droplets during service interactions, which significantly improves the safety (hygiene and reliability) of service processes (WHO, 2020). Therefore, we suggest that having employees wear facemasks can enhance customer-perceived service quality.

H1. Having employees wear facemasks (as opposed to not wearing them) enhances customer-perceived service quality.

Employee apparel is not only an important signal that has positive or negative effects on customer perceptions of expertise, but according to several previous studies, it also has significant effects on customers' perceptions of an employee's friendliness (Brase & Richmond, 2004), authority (Brase & Richmond, 2004), and competence (Morris, Gorham, Cohen, & Huffman, 1996). All of these attributes are commonly viewed as related to expertise (Cummings, 2014). Apparel that more effectively signals expertise leads to higher rates of customers approaching employees in service aisles. Employees' uniforms can help to clarify their roles as information providers, gain customers' confidence (Barney et al., 2020), and increase customers' approach and purchase intentions (Shao, Baker, & Wagner, 2004). As mentioned previously, a white coat is commonly regarded as an apparel-based signal of expertise (Spragley & Francis, 2006). The white coat is associated with professionalism and authority, and similarly, a facemask may represent professionalism, safety, and hygiene (Leung, Chu, et al., 2020; Yu et al., 2021). During the COVID-19 pandemic, this understanding of facemasks has been widely accepted by the public in most communities in China. In this study, we argue that having employees wear facemasks as an organizational response to the pandemic shows that employees are playing roles as experts, caretakers, and information providers. Thus, having frontline workers wear facemasks can make a hotel more attractive to customers during the COVID-19 pandemic, and we propose the following hypothesis.

H2. Having hotel workers wear facemasks (as opposed to not wearing them) enhances customer perceptions of employee expertise.

Security and reliability are among the antecedents of consumer trust toward employees and service providers. For example, Wang, Beatty, and Foxx (2004) found that displaying security disclosures and awards helps retailers to signal that they are trustworthy. McCole, Ramsey, and Williams (2010) also showed the crucial role of security in building consumer trust in e-commerce environments. Further research on consumer trust in the hospitality and tourism sector has shown that customer trust is closely associated with whether a hotel acts in a consistent, reliable manner and fulfills its promises to consumers (Schoorman, Mayer, & Davis, 2007). Tourists base their levels of trust in hotels mainly on the reliability of their services and the quality of the information they provide (Filieri, Alguezaui, & McLeay, 2015). Cha and Borchgrevink (2019) and Wei, Chen, and Lee (2021) presented similar results, all finding that customers have more trust in restaurants that are reliable and that have implemented efficient preventative health and safety measures. Kim, Kim, Lee, and Tang (2020), Kim, Kim, and Wang (2021), and Starr (2020) indicated that some customers appreciate restaurants with strict preventative measures and are willing to pay more, resulting in a long-term benefit to brand trust. Yu et al. (2021) posited that implementing preventative measures (e.g., facemask and social distancing requirements) would help build a safe consumption environment, which, as the signal of safety, could result in brand trust. As Barney et al. (2020) demonstrated, employee apparel may indirectly affect customers' trust in a worker. In summary, we argue that all of these means of building trust suggest that having employees wear facemasks tends to enhance customer trust during hospitality service interactions. Wearing a facemask is one of the most noticeable cues

influencing customers' evaluations of security and reliability during the COVID-19 pandemic, and therefore we propose the following two hypotheses.

H3. Having hotel employees wear facemasks (as opposed to not wearing them) enhances customer trust in employees.

H4. Having hotel employees wear facemasks (as opposed to not wearing them) enhances customer trust in hotels.

2.5.2. Effects of perceived employee expertise on customer perceptions of service quality

The consumption of services involves a process of human interactions (Gronroos & Ojasalo, 2004), and therefore customers' evaluations of those interactions are critical in their perceptions of service quality (Joon Choi & Sik Kim, 2013). The impressions that service providers make directly affect judgments on the quality of service, either positively or negatively (Brady & Cronin, 2001). Such evaluations of service are based on customers' perceptions of employee attitudes, behavior, traits, and expertise (Grobela, 2019; Sürücü et al., 2019). Customers' evaluations of overall service quality also involve perceptions of employees' responsiveness, efficiency (promptness), courtesy, empathy, reliability, and professionalism (Ekinci & Dawes, 2009; Redda & Van Deventer, 2017). As such, when an employee's performance is helpful and knowledgeable, a customer's evaluations of service quality are higher. For example, Redda and Van Deventer (2017) and Yang, Pang, Liu, Yen, and Michael Tarn (2015) both argued that the perceived quality of a service depends on employees' willingness and ability to deliver a high-quality product in a timely and helpful manner. Barney et al. (2020) found that employee apparel can have a significant effect on customer approach behavior, as apparel elicits expectations about expertise and service. In general, providing employees with proper apparel promotes favorable impressions of service quality.

Concerning the hospitality sector, Sürücü et al. (2019) pointed out that the perceived quality of a hotel is affected by the behavior, competence, and knowledge level of its employees. Arasli and Kayaman (2007) found that employees' physical attributes and keenness of attitude are the main factors that influence customer perceptions of a hotel's service quality and build customer loyalty. Biedenbach, Bengtsson, and Wincent (2011) suggested that the interactions between employees and their customers involve not only how the employees perform their work roles, but also their emotional reactions in relating to customers. In following both signaling theory and role theory, we suggest that the foregoing discussions are all related to the factor of employee expertise, and therefore employee expertise can serve as a primary signal of service quality (Barney et al., 2020). We thus propose the following hypothesis.

H5. Customer-perceived employee expertise mediates the relationship between employees wearing facemasks and customer-perceived service quality.

2.5.3. Effects of customer trust on customer-perceived service quality

During the sensitive period of dealing with COVID-19, success in gaining customer trust is an essential predictor of whether the hotel industry can resume operations and recover its profitability. Previous studies have found that customer trust influences the quality of interactions with service providers. Customer trust helps to eliminate the boundaries between service providers and customers (Tanford, 2016) and plays a vital role in formulating customer intentions toward the hotel industry (Al-Ansi, Olya, & Han, 2019; Kim, Kim, & Kim, 2009). The trust barriers raised by many service providers have caused customers to pay more attention to service quality (Mao, Jones, Li, Wei, & Lyu, 2020). Therefore, we can infer that customer trust in employees and hotels plays a pivotal role in the way that employees wearing facemasks affect perceived service quality.

Furthermore, according to trust-transfer theory, building trust can be viewed as a step-by-step process (Ponnapureddy et al., 2017). We argue

that customers' trust toward employees has a positive effect on customers' trust toward an organization (for example, a hotel). Previous studies have shown that an individual's trust in a target can shift to other related targets based on the cognitive process involved (such as assessing the credibility of an authenticity claim) or the communication process concerned. For instance, Esch, Langner, Schmitt, and Geus (2006) argued that customers who trust a particular brand may feel emotionally attached to both the brand and the company. Kim et al. (2009) and La and Choi (2012) both indicated that trust in a service provider tends to promote more positive future behavior toward the provider's company. Kim et al. (2020) indicated that the signal of a safe dining environment during COVID-19 could translate into trust in the restaurant. We, therefore, propose that customers tend to form deeper relationships with hotels according to their levels of trust in the hotels' employees, as stated in the following hypotheses.

H6. Customer trust in employees mediates the relationship between employees wearing facemasks and customer-perceived service quality.

H7. Customer trust in hotels mediates the relationship between employees wearing facemasks and customer-perceived service quality.

H8. Customer trust in employees and customer trust in hotels play serial mediating roles between employees wearing facemasks and customer-perceived service quality.

2.5.4. Serial mediation of customer-perceived employee expertise and customers' trust

Previous studies have shown that during consumer–employee service interactions, customer-perceived employee expertise is linked to customer trust. For example, Barney et al. (2020) found that perceptions of expertise had a positive relationship with customer trust. Wang et al. (2004) pointed out that a customer's perception of employee expertise is an important dimension of trust. Ladebo (2006) showed that for interaction partners to create and preserve trust, they must first demonstrate their expertise, integrity, or character. Luhmann (2018) found that customers' perceptions of employee expertise, competence, reliability, or dependability are built on cognitive-based trust. DeWitt, Nguyen, and Marshall (2008) argued that by cognitive appraisal theory, customers dealing with service issues feel that getting a satisfying response and a fair solution from a firm determines their perceptions of trust. Therefore, we expect customers' perceptions of employee expertise to have a major effect on their levels of trust and propose the following hypotheses.

H9. Customer-perceived employee expertise and customer trust in employees play serial mediating roles in the relationship between the effects of employees wearing facemasks and customer-perceived service quality.

H10. Customer-perceived employee expertise and customer trust in hotels play serial mediating roles in the relationship between the effects of employees wearing facemasks and customer-perceived service quality.

H11. Customer-perceived employee expertise, customer trust in employees, and customer trust in hotels play serial mediating roles in the relationship between the effects of employees wearing facemasks and customer-perceived service quality.

Building upon the proposed hypotheses, a theoretical model of the current research was presented in Fig. 1.

3. Methodology

3.1. Design and sample

We adopted a 2 (employee gender: male vs. female) \times 2 (employee wearing a facemask: yes vs. no) between-subjects design. As COVID-19 has made direct interaction problematic for researchers, we collected our data using Wenjuanxing (<https://www.wjx.cn/>), which is the largest

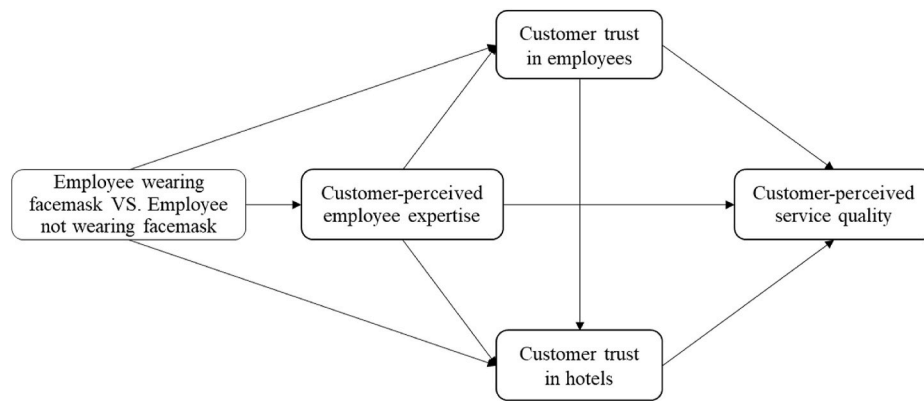


Fig. 1. Theoretical model.

online survey platform that targets Chinese respondents (and is similar to Amazon Mechanical Turk). The participants were randomly assigned to one of four experimental conditions, and they received a reward of RMB 3.0 after submitting their completed questionnaires. A total of 665 Chinese adult customers were recruited from March 6 to 13, 2021. Two attention-check questions were incorporated into the survey to rule out careless responses. In the first attention check, the respondents were instructed to choose the second option. In the second attention check, the respondents were asked to select the “moderately disagree” option from the following seven options: strongly disagree, moderately disagree, disagree, neutral, agree, moderately agree, and strongly agree. According to our calculations, it would take 2–5 min to carefully read the stimulus materials and complete the questionnaire. As such, we removed the questionnaires that took less than 150 s or more than 400 s to complete. G*power 3.1 software was used to perform a power analysis to determine the appropriate sample size (Faul, Erdfelder, Lang, & Buchner, 2007). The power analysis used an α of 0.05 and a power level of 0.8 as the recommended standard parameter levels (Cohen, 1990). A sample size of 64 was required to reach sufficient statistics. We collected valid responses from 406 participants. Among our four experimental scenarios, the cell sizes ranged from 98 to 107 participants. Therefore, the sample size of this study was more than sufficient to ensure the robustness of the results of the statistical method.

Our demographic information indicated that the majority of the participants were female (59.61%), aged between 21 and 31 (46.31%), had bachelor’s degrees (71.18%), and had monthly incomes of between RMB 5,001 and RMB 10,000 (47.78%) (Table 1).

Table 1
Demographic information (n = 406).

Variable	Category	Count	Percentage
Gender	Male	164	40.39
	Female	242	59.61
Age	≤20	13	3.20
	21–30	188	46.31
	31–40	151	37.19
	41–50	37	9.11
	51–60	12	2.96
	≥61	5	1.23
Education	High school or below	20	4.93
	Junior college	71	17.49
	University	289	71.18
	Master’s degree or higher	26	6.40
Monthly income (RMB)	≤2000	44	10.84
	2001–5000	101	24.88
	5001–10000	194	47.78
	≥10000	67	16.50

3.2. Procedures and materials

There is non-verbal communication from physical appearance during consumer–employee interactions, which not only include unconscious signals from service employees (e.g. pupil dilation, blushing, perspiration, and facial attractiveness) (Chesney, Chuah, Dobeles, & Hoffmann, 2017; Kotler, Makens, Bowen, & Baloglu, 2017), but also include conscious behavioral signals from service employees (e.g. uniform wearing, hairstyle, and hat-wearing) (Bower & Landreth, 2001; Foster & Resnick, 2013; Johnson, Schofield, & Yurchisin, 2002). In this study, we mainly explore the influence mechanism between conscious behavioral signals (e.g., facemask wearing) and service experience. As facial attractiveness of service employees can significantly affect customers’ service evaluations (Choi, Huang, Choi, & Chang, 2020; Söderl & Julander, 2009), to minimize the interference of facial attractiveness, we selected moderately attractive students to make the stimulus materials. To do this, firstly, we selected three mature males and three mature females from a total of 84 hotel management students and took photos of their upper bodies. Afterward, we invited three professors to rate the students’ facial attractiveness using the photos. And then, based on the three professors’ ratings, we selected a female student with an average level of facial attractiveness and a male student with an average level of facial attractiveness. Secondly, we asked professional photographers to place facemask images on the two photos. Finally, we had four photos in the stimulus materials, showing each student with and without a facemask (see Appendix A).

The research scenario involved a hotel check-in task, assuming the participants were checking in at a hotel front desk. Firstly, the participants were asked to imagine themselves in the scenario of checking in at a four-star hotel. Secondly, they would take a look at an image photo of a front-desk employee from the four photos randomly. They were told that the employee in the photo would help them check in, and they were asked to look at the photo for a few seconds.

After reading the information of the hypothetical scenario and looking at the photo of the employee, the participants were asked to answer several questions, which were separately designed to evaluate customer-perceived employee expertise, customer trust in employees, customer trust in hotels, and customer-perceived service quality. All of the items were measured on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Table 2 provides the factor loading, average variance extracted, Cronbach’s alpha, and composite reliability values for all of the constructs. We also checked the perceived clarity and realism of the scenario with two questions that were adapted from Huang, Zhang, Gursoy, and Shi (2020).

4. Results

Before conducting the hypothesis tests, a preliminary analysis was

Table 2
Measurement items and validity assessment (n = 406).

Variable/Items	FL	α	AVE	CR
Customer-perceived employee expertise (Hwang et al., 2016)		0.888	0.748	0.922
This employee is skilled at his/her job(s)	0.836			
This employee is knowledgeable about his/her job(s)	0.862			
This employee is experienced in his/her job(s)	0.879			
This employee is proficient in his/her job(s)	0.881			
Customer trust in employees (Santos & Basso, 2012)		0.878	0.733	0.917
The employee is very dependable	0.881			
The employee is very competent	0.850			
The employee is of very high integrity	0.874			
The employee is very responsive to customers	0.819			
Customer trust in hotels (Jeaheng et al., 2020)		0.853	0.773	0.911
I am confident that this hotel would provide the best deal	0.884			
I think this hotel offered service at high integrity	0.895			
I can trust the performance of this hotel to be good	0.859			
Customer-perceived service quality (Hwang et al., 2016)	0.884	0.845	0.764	0.907
I would say that the experience at this hotel is excellent	0.888			
I believe that we get a superior experience at this hotel	0.901			
I think that the total experience procedure at this hotel is excellent	0.832			

Note: FL = Factor loading; α = Cronbach's α ; CR = Composite reliability; AVE = Average variance extracted.

performed to check the clarity and realism of the scenario. Compared with the scale mean ($M = 5.012$, $SD = 1.057$), the average rating of the clarity and realism items indicated that the scenario was realistic ($M = 5.420$, $SD = 1.073$, $t = 7.654$, $p = 0.000$).

To test hypotheses H1–H4, we conducted a series of independent sample t -tests using SPSS 24.0. The results are presented in Table 3. As predicted, the participants perceived the employees who wore facemasks as providing better service quality ($M_{\text{wearing}} = 5.030 > M_{\text{not wearing}} = 4.525$, $t = 4.487$, $p = 0.000$). Further analysis found that the participants viewed the employees wearing facemasks as providing better service quality regardless of the employee's gender ($M_{\text{female wearing}} = 5.159 > M_{\text{female not wearing}} = 4.895$, $t = 1.989$, $p = 0.048$; $M_{\text{male wearing}} = 4.897 > M_{\text{male not wearing}} = 4.156$, $t = 4.198$, $p = 0.000$). These findings provide support for H1.

Employees who wore facemasks were perceived as having greater

expertise ($M_{\text{wearing}} = 5.331 > M_{\text{not wearing}} = 4.745$, $t = 5.476$, $p = 0.000$). Further analysis found that the employees who wore facemasks were viewed as having greater expertise regardless of their gender ($M_{\text{female wearing}} = 5.460 > M_{\text{female not wearing}} = 5.046$, $t = 3.062$, $p = 0.002$; $M_{\text{male wearing}} = 5.197 > M_{\text{male not wearing}} = 4.444$, $t = 4.667$, $p = 0.000$). These findings provide support for H2.

Employees who wore facemasks were perceived as being more trustworthy ($M_{\text{wearing}} = 5.316 > M_{\text{not wearing}} = 4.670$, $t = 4.485$, $p = 0.000$). Further analysis found that the employees who wore facemasks were perceived as being more trustworthy regardless of their gender ($M_{\text{female wearing}} = 5.465 > M_{\text{female not wearing}} = 5.120$, $t = 2.702$, $p = 0.007$; $M_{\text{male wearing}} = 5.160 > M_{\text{male not wearing}} = 4.219$, $t = 5.625$, $p = 0.000$). These findings provide support for H3.

Employees who wore facemasks were perceived as working in a more trustworthy hotel ($M_{\text{wearing}} = 5.238 > M_{\text{not wearing}} = 4.762$, $t = 5.476$, $p = 0.000$). Further analysis found that employees who wore facemasks were perceived as working for more trustworthy hotels regardless of their gender ($M_{\text{female wearing}} = 5.371 > M_{\text{female not wearing}} = 5.102$, $t = 2.027$, $p = 0.044$; $M_{\text{male wearing}} = 5.101 > M_{\text{male not wearing}} = 4.421$, $t = 4.202$, $p = 0.000$). These findings provide support for H4.

A multivariate analysis of variance was also performed to investigate the interaction effect of employee gender and facemask wearing on customer service experience. The analysis showed that the interaction effect of gender and facemask wearing on customer trust in employees ($F = 8.994$, $p = 0.005$), customer trust in hotels ($F = 4.265$, $p = 0.048$), and customer-perceived service quality ($F = 5.751$, $p = 0.030$) was significant. However, no significant result was obtained for customer-perceived employee expertise ($F = 2.605$, $p = 0.107$). Fig. 2 shows the results of this interaction effect more clearly.

To test hypotheses H5–H11, we conducted a series of mediation analyses with employees who wore or were not wearing facemasks as the independent variable, with customer-perceived employee expertise, customer trust in employees, and customer trust in hotels as the mediators, and with customer-perceived service quality as the dependent variable (see Model 6 in (Hayes, 2017)). The independent variable was categorical, and it was therefore transformed into two dummy variables (Hayes & Preacher, 2013). The condition of the employee wearing a facemask was assigned a value of 1, and the condition of the employee not wearing a facemask was assigned a value of 0. Mediation analyses were conducted with PROCESS version 3.5 (Hayes, 2017), using the bootstrapping method with 5,000 bootstrapped samples and a confidence interval (CI) of 95%, as shown in Table 4.

The results showed that customer-perceived employee expertise mediated the effect that an employee wearing a facemask had on customer-perceived service quality (indirect effect = 0.084; 95% CI =

Table 3
Means, mean difference, t -value, and significance levels (n = 406).

Variable	Employee	Sample	Mean	T-value	Sig.	Employee	Sample	Mean	Mean difference	T-value	Sig.
CPEE	NW	196	4.745	5.476	0.000	Female	NW 98	5.046	0.414	3.062	0.002
							W 107	5.46			
	W	210	5.331			Male	NW 98	4.444	0.753	4.667	0.000
							W 103	5.197			
CTE	NW	196	4.67	5.908	0.000	Female	NW 98	5.12	0.345	2.702	0.007
							W 107	5.465			
	W	210	5.316			Male	NW 98	4.219	0.941	5.625	0.000
							W 103	5.16			
CTH	NW	196	4.762	4.485	0.000	Female	NW 98	5.102	0.269	2.027	0.044
							W 107	5.371			
	W	210	5.238			Male	NW 98	4.421	0.680	4.202	0.000
							W 103	5.101			
CPSQ	NW	196	4.525	4.487	0.000	Female	NW 98	4.895	0.264	1.989	0.048
							W 107	5.159			
	W	210	5.03			Male	NW 98	4.156	0.741	4.198	0.000
							W 103	4.897			

Note. CPEE = customer-perceived employee expertise; CTE = customer trust in employees; CTH = customer trust in hotels; CPSQ = customer-perceived service quality. NW = not wearing, W = wearing.

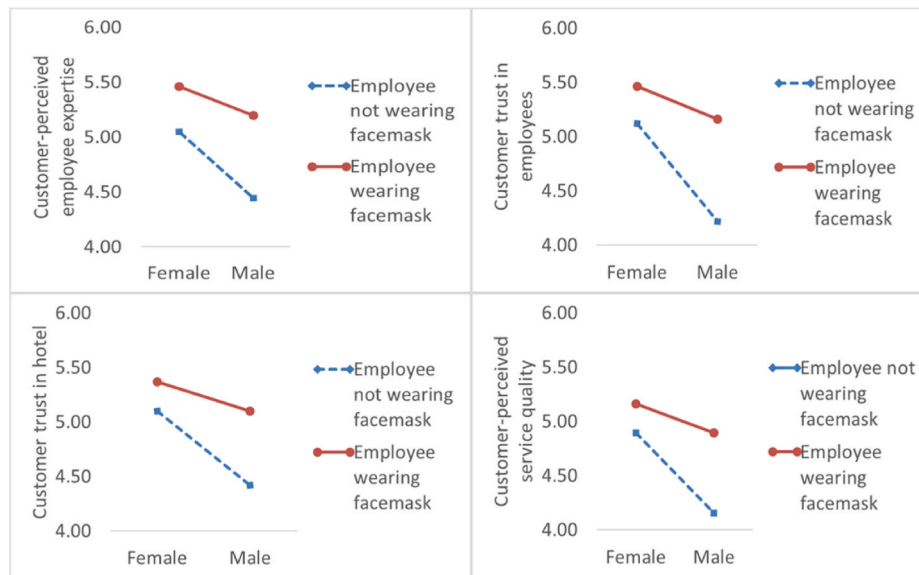


Fig. 2. The interaction effect of employee gender and employee wearing facemask on customer service experience.

Table 4
Results of indirect effects.

Hypothesis	Indirect	SE	95%CI	95% CI Higher
Total	0.493	0.094	0.3084	0.6813
H5: EWF→CPEE→CPSQ	0.084	0.037	0.0183	0.1646
H6: EWF→CTE→CPSQ	0.030	0.016	0.0041	0.0648
H7: EWF→CTH→CPSQ	−0.013	0.039	−0.0887	0.0678
H8: EWF→CPEE→CTE→CPSQ	0.099	0.036	0.0345	0.1758
H9: EWF→CPEE→CTH→CPSQ	0.104	0.035	0.0470	0.1844
H10: EWF→CPTE→CTH→CPSQ	0.044	0.020	0.0088	0.0862
H11: EWF→CPEE→CTE→CTH→CPSQ	0.146	0.034	0.0830	0.2165

Note. EWF = employee wearing facemask; CPEE = customer-perceived employee expertise; CTE = customer trust employees; CTH = customer trust hotels; CPSQ = customer-perceived service quality.

0.0183 to 0.1646). Therefore, **H5** is supported. Similarly, the results confirmed the significant mediation of the customer's trust toward the employee (indirect effect = 0.030; 95% *CI* = 0.0041 to 0.0648). These findings support **H6**. However, the results showed that the mediation of the customer's trust in hotels was not significant (indirect effect = −0.013; 95% *CI* = −0.0887 to 0.0678), and therefore **H7** is not supported.

Furthermore, the serial mediation effect of the customer's perception of employee expertise and the customer's trust in employees (with and without a facemask) on the customer's perceptions of service quality was found to be significant (indirect effect = 0.099; 95% *CI* = 0.0345 to 0.1758). Therefore, **H8** is supported.

The serial mediation effect of the customer-perceived employee expertise (with the employee wearing or not wearing a facemask) and of the customer's trust in hotels on the customer's perceptions of service quality was found to be significant (indirect effect = 0.104; 95% *CI* = 0.0470 to 0.1844). **H9** is therefore supported.

The serial mediation effect of the customer's trust in employees (wearing or not wearing a facemask) and the customer's trust in hotels on the customer's perceptions of service quality were found to be significant (indirect effect = 0.044; 95% *CI* = 0.0088 to 0.0862), and therefore **H10** is supported.

The serial mediation effect of customer-perceived employee expertise, the customer's trust in employees (with and without a facemask), and the customer's trust in hotels on the customer's perception of

service quality were significant (indirect effect = 0.146; 95% *CI* = 0.0830 to 0.2165). Therefore, **H11** is supported.

5. Discussion and implications

5.1. Discussion

This study confirms that having employees wear facemasks positively affected customer perceptions of employee expertise, employee trustworthiness, hotel trustworthiness and customer perceptions of service quality. From the signaling theory, employees wearing facemasks reduce the spread of respiratory droplets during service interactions, which significantly improves the safety (hygiene and reliability) of service processes (WHO, 2020). Thus it can be found that employees wearing facemasks can convey safe and hygienic service clues to customers. These results are consistent with previous study findings that employees' apparel can be used to signal specific traits about expertise (Brase & Richmond, 2004; Gledhill et al., 1997; Hochberg, 2007; Hoffman & Turley, 2002; Spragley & Francis, 2006). They also emphasize that facemask wearing, as an employee apparel trait and a signal of safety, hygiene, and reliability, significantly influences customers' perceptions of trust during service interactions (Yu et al., 2021).

In the analysis of the experimental data, we found an interesting phenomenon: When not wearing facemask, participants perceived a higher level of trust towards employees, trust towards hotels, and service quality based on female employees than male employees. People are often influenced by occupational gender stereotypes or gender biases in service interaction and social life. Since men traditionally occupy paid work and higher-level positions (Kossek, Su, & Wu, 2017), men are usually known for their agency and task performance (e.g. competence), while women are expectedly more warmth, caring, and social-oriented (Ellemers, 2018), with consequences in the labor market (Wong, Ho, Wang, & Miller, 2017). Women make up the majority of the workforce in the tourism and hospitality sector (Campos-Soria, Garcia-Pozo, & Sanchez-Ollero, 2015), they tend to be concentrated in the lowest-paid, subordinate jobs such as waitressing or cleaning, being less represented in technical or management tasks (García-Pozo, Sánchez-Ollero, & Marchante-Mera, 2014). Therefore, it can be inferred that when women are engaged in tourism and reception services, they can give play to the characteristics of women's enthusiasm, care, and social orientation. Women's characteristics match with service work, which eventually leads to people's higher evaluation of women's service work than men.

Recent research in the hotel field has found this phenomenon. For example, [Pinto, Vieira, and Fernandes \(2020\)](#) found that female hotel employees have a higher evaluation of job suitability than male employees.

According to the multivariate analysis of variance results, the interaction effect of employee gender and facemask wearing on customer trust in employees, customer trust in hotels, and customer-perceived service quality were significant, but the interaction effect on customer-perceived employee expertise was not significant. This shows that employee gender has a certain effect on the relationships between employee facemask wearing and customer trust in employees, customer trust in hotels, and customer-perceived service quality. Which is also related to occupational gender stereotypes. Occupational gender stereotypes believe that women are more suitable for service work than men. Men in female-dominated occupations are more likely to be unsupported, devalued and stigmatized than men in other occupations ([Forsman & Barth, 2017](#)). It can be seen that there are differences in the evaluation of male and female employees in the service industry. At the same time, when customers have insufficient or ambiguous information, they have been found to make inferences about the attitudes and performance of frontline service employees by drawing on easily observable cues, including a person's physical attractiveness, age, or gender ([Hekman et al., 2010](#); [Luoh & Tsaor, 2009, 2011](#)). Therefore, it can be inferred that the impact of employees wearing facemasks on customer service experience will be affected by employees' gender. Many studies in the hotel industry have confirmed that employee gender has a strong moderating effect on customer service experience ([Smith, Martinez, & Sabat, 2016](#); [Wu, Fan, & Mattila, 2015](#)). The findings also show that customers may develop their perceptions of employee expertise by observing how employees complete tasks ([Jaseem Bu-Rahmah & Jacobs, 2012](#)) and their style of dress ([Spragley & Francis, 2006](#)), rather than based on their gender.

The mediation effect tests showed that the mediation effects of customer-perceived employee expertise and customer-perceived trust in employees were significant. Thus, customer-perceived employee expertise (especially reliability) is an important prerequisite and foundation for building customer trust during service interactions. However, the mediation effect of customer-perceived employee expertise and customer-perceived trust in hotels was not significant. A possible explanation suggested by signaling theory is that the participants tended to infer the credibility of the employees from their facemasks. However, another possible cause is that due to the COVID-19 pandemic, customers have grown more concerned about the health and hygiene of hotels, and customer distrust of hotels has increased ([Dube et al., 2020](#); [Gössling et al., 2021](#)).

The serial mediation of customer-perceived employee expertise, customer trust in employees (wearing or not wearing facemasks), and customer trust in hotels on customer-perceived service quality was found to be significant. This set of findings clearly shows that employees wearing facemasks can enhance customer perceptions of service quality through the multiple, parallel mediating mechanisms of customer-perceived employee expertise, customer trust in employees, and customer trust in hotels. These results confirm and emphasize employees' facemask wearing as a noticeable apparel-based signal, which may indicate information about their professional roles and communicate desirable service attributes to customers ([Spragley & Francis, 2006](#); [Yu et al., 2021](#)). In turn, this may directly or indirectly promote customers' emotional reactions (e.g., trust) to a hotel ([Kim et al., 2020](#)) and enhance customer perceptions of service quality ([Cha & Borchgrevink, 2019](#)).

5.2. Theoretical implications

As the sudden outbreak of the COVID-19 pandemic has had a damaging effect on the international hospitality industry ([Nicola et al., 2020](#)), active preventative measures have been encouraged and taken by

various countries and hospitality enterprises ([Breier et al., 2021](#); [Rigby, 2020](#)) to resume work in a secure and orderly manner. Facemask requirements in public remain controversial in different countries and regions ([Cheng et al., 2020](#); [Greenhalgh et al., 2020](#)). Nonetheless, wearing facemasks has become a common element of interactions between customers and employees in China during the COVID-19 pandemic. Before this study, no full investigation had been conducted on the effects of having employees wear facemasks on customer-perceived service quality based on signaling theory. The findings of this study, therefore, provide new and important insights for managers in the hotel industry.

Previous studies of the customer–employee interactions have suggested that employees' apparel can help to clarify their roles as information providers ([Barney et al., 2020](#); [Spragley & Francis, 2006](#); [Yan et al., 2011](#)), as it is associated with perceptions of authority, competence, expertise, reliability, and trust ([Brase & Richmond, 2004](#); [Gledhill et al., 1997](#); [Hochberg, 2007](#); [Ponnapureddy et al., 2017](#)). For example, a white coat is commonly regarded as an apparel-based signal of expertise ([Spragley & Francis, 2006](#)) that influences customers' evaluations of service quality. Although many scholars have considered the protective effects of wearing facemasks in terms of hygiene and safety ([Donthu & Gustafsson, 2020](#); [Leung, Chu, et al., 2020](#); [Yu et al., 2021](#)), few have considered the effects of facemask wearing on the customer service experience, especially service delivery quality. We extend the literature on the customer–employee interaction by examining the effects of having employees wear facemasks (as employees' apparel signals) on customer-perceived service quality based on signaling theory.

5.3. Managerial implications

We show that employees' facemask wearing is among the most noticeable apparel cues that directly (or indirectly) affect consumers' evaluations of employees, hotels, and service quality. Thus, to reduce information asymmetry and to help consumers obtain better product information, hotel employees wearing facemasks can send pre-purchase signals to inform consumers of their service quality and communicate desirable service attributes to customers, especially those with no prior experience with a hotel product or service.

The effectiveness of facemasks in protecting healthy people is well demonstrated in the literature ([Gursoy & Chi, 2020](#); [Leung, Sharma, Adithipyangkul, & Hosie, 2020](#)), although some residents and service employees in some countries or regions still refuse to wear facemasks. This study finds that having employees wear facemasks can enhance customer-perceived service quality. Therefore, hotel businesses stand to benefit by ensuring that frontline employees wear facemasks when interacting with customers.

In addition, the results of this study indicate that hotel managers should be aware of the differences in the effects that male and female employees wearing facemasks have on customer-perceived service quality. Managers should exercise caution as they seek to improve employee service performance processes. In general, customers tend to perceive female facemask-wearing employees as providing higher quality service than male facemask-wearing employees. However, the improvement in customer perception when male employees wear facemasks is greater than that observed in the difference between mask-less and mask-wearing females. Therefore, hotel managers should ensure that all employees wear facemasks, but especially male employees.

5.4. Limitations and future research

This study has several limitations that could be addressed in future research. First, the experimental nature of the study limits its generalizability ([Li, Liu, & Huan, 2019](#)). The scenario used to create the experimental stimuli reduced the participants' perceptions of the situation, making the conditions more simplified than a real customer service situation. Future studies could conduct field research to examine

the effects that employees wearing facemasks have on actual customer service experiences. Second, the study adopts a Chinese social-cultural context, facemask wearing, as a response to viruses and bacteria, has become normalized in China. However, facemask wearing was rarely seen in Western cultures before the COVID-19 pandemic (Kirk & Rifkin, 2020). Based on the value of individualism in the Western world, which emphasize the values of equality, individual freedom, autonomy and uniqueness (Gong & Wang, 2019; Lehman, Markus, & Kitayama, 1999), individuals pay more attention to self-interest, personal goals and personal achievement (Jahandideh, Golmohammadi, Meng, O’Gorman, & Taheri, 2014). Furthermore, as the evidence base on the efficacy and acceptability of the different types of facemasks in preventing respiratory infections during epidemics is sparse and contested (Feng et al., 2020), countless individuals in the western world believed that they would survive the COVID-19 pandemic (Haischer et al., 2020) and refuse to wear facemasks (Brandon, 2020). In addition, some individuals are concerned that face coverings could make them stand out negatively because of racial or political biases in the western world (Kirk & Rifkin, 2020). Therefore, the research under the social-cultural background of China may be untypical, future research could explore the effects of employees’ facemask wearing on customer service experience based on different social-cultural situations. Third, this study only examines the

effects of employees wearing facemasks on customer service experience, and does not investigate other customer attitudes and behavioral variables, such as customer satisfaction or customer repurchase intentions. These shortcomings should be dealt with and overcome in future research.

In addition, based on the occupational gender stereotypes, there are differences in the evaluation of male and female employees in the service industry. Moreover, men and women have different information processing modes, resulting in men and women interpreting the same social information differently (Crick & Dodge, 1994), as is inferred by Social information processing theory. Above all, considering that employee gender and customer gender may also have a moderating effect on the customer service experience (Kim, Cho, & Kim, 2019; Smith et al., 2016; Wu et al., 2015), subsequent research could explore the moderating role of gender consistency in the relationship between employee facemask wearing and the customer service experience.

Declaration of competing interest

We have no conflict of interest to declare. There is no financial interest to disclose.

Appendix A



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